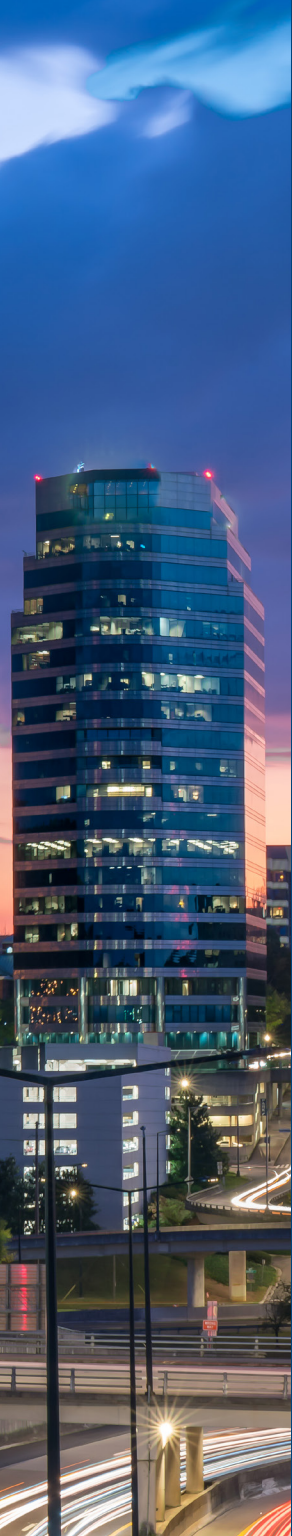




Connecting Our Community

2021 Annual Report



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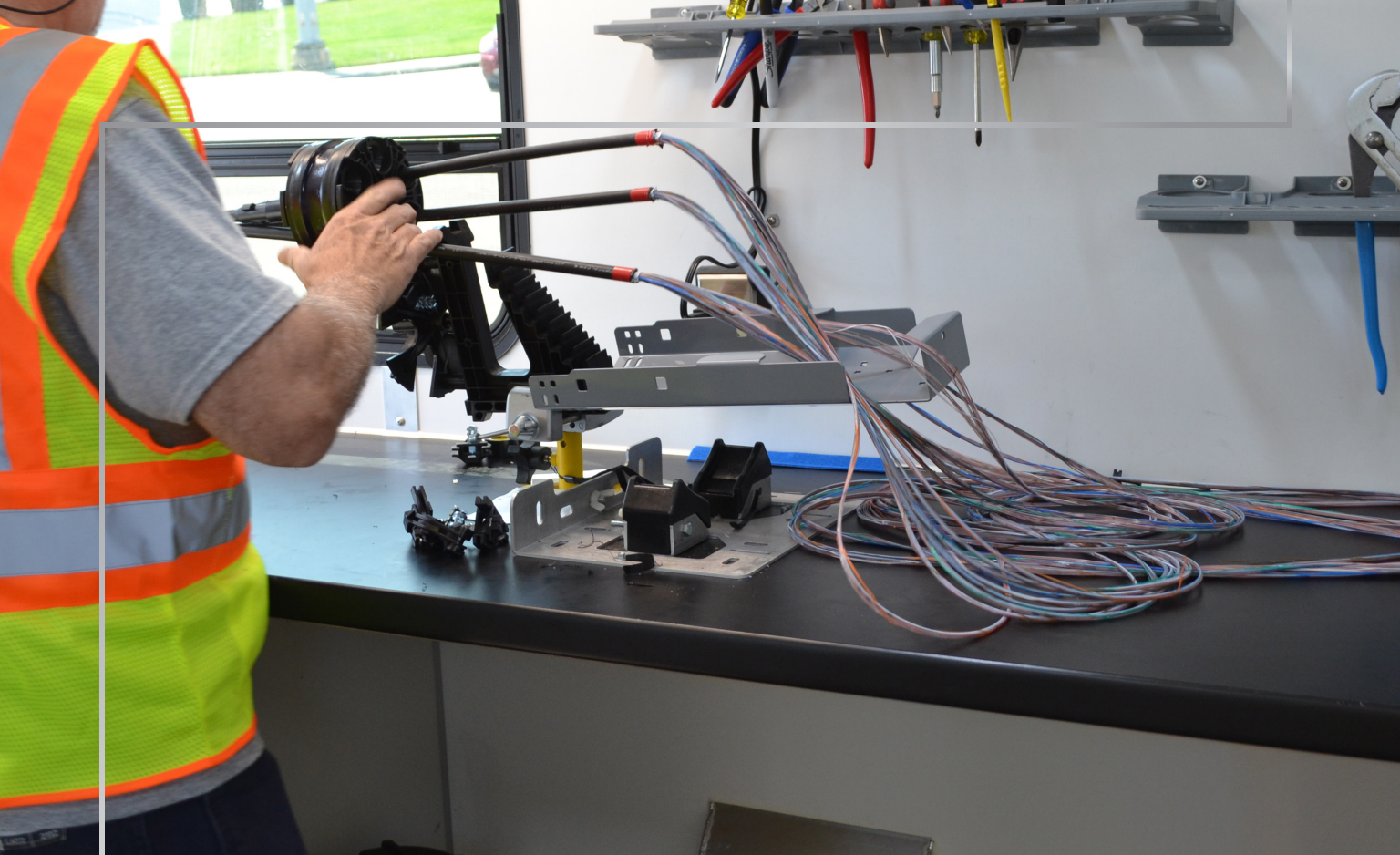


For more than 80 years, KUB has connected the community to safe, reliable, and affordable utility services. When the community needed clean water and access to energy sources, KUB was formed to provide it at an affordable cost - utilities paid for by the people, for the people. The COVID-19 pandemic showed us our community now needs reliable, high-speed internet, and I'm proud that this year, we were approved to provide broadband services as our fifth utility. By the end of our seven-year buildout, everyone in our electric service territory, including many with zero or limited access to internet, will have access or more choice. And the economic impact is estimated at up to \$85.7 million during the same time frame.

The addition of broadband builds upon a strong foundation of customer service highlighted throughout this report. Our efforts to continually improve our electric, water, wastewater, and natural gas systems are ongoing through our Century II program, and we have found new ways to support low-income customers through new funding sources, weatherization, and emergency repair services.

Our community will also be connected to renewable energy like never before through our commitment to 20% solar-generated electricity by 2024 and the construction of Knoxville's first Community Solar array. It's an exciting time for the Knoxville area, and I'm proud of the part KUB is playing.

-Gabe Bolas, KUB President and CEO



Introducing Broadband

In FY 21, KUB received approval from its Board of Commissioners and Knoxville City Council to establish a fiber division and provide broadband services to customers within its electric service territory. KUB will increase its existing work installing fiber distribution to improve electric reliability and allow for broadband service. The first broadband customer will go online in 2022 beginning a seven-year rollout across the electric service territory.



\$702
million

KUB will expand its distribution fiber system to 5,000 miles throughout its 675-square-mile electric service territory. This will further improve system reliability and enable its \$702 million investment to provide broadband service to the community.

85%
distressed
districts

During Phase 1 of its broadband rollout, set to begin in 2022, KUB will reach 17 out of 20 distressed census districts in its service territory. KUB is also in the planning stages of a program to support low-income, broadband payment assistance.

\$18.5
million

If 35% of potential broadband customers receive the service, the addition of broadband will lead to a minimum increase of \$18.5 million in annual Tennessee incomes, with a maximum increase of \$85.7 million. Source: Boyd Center for Business & Economic Research

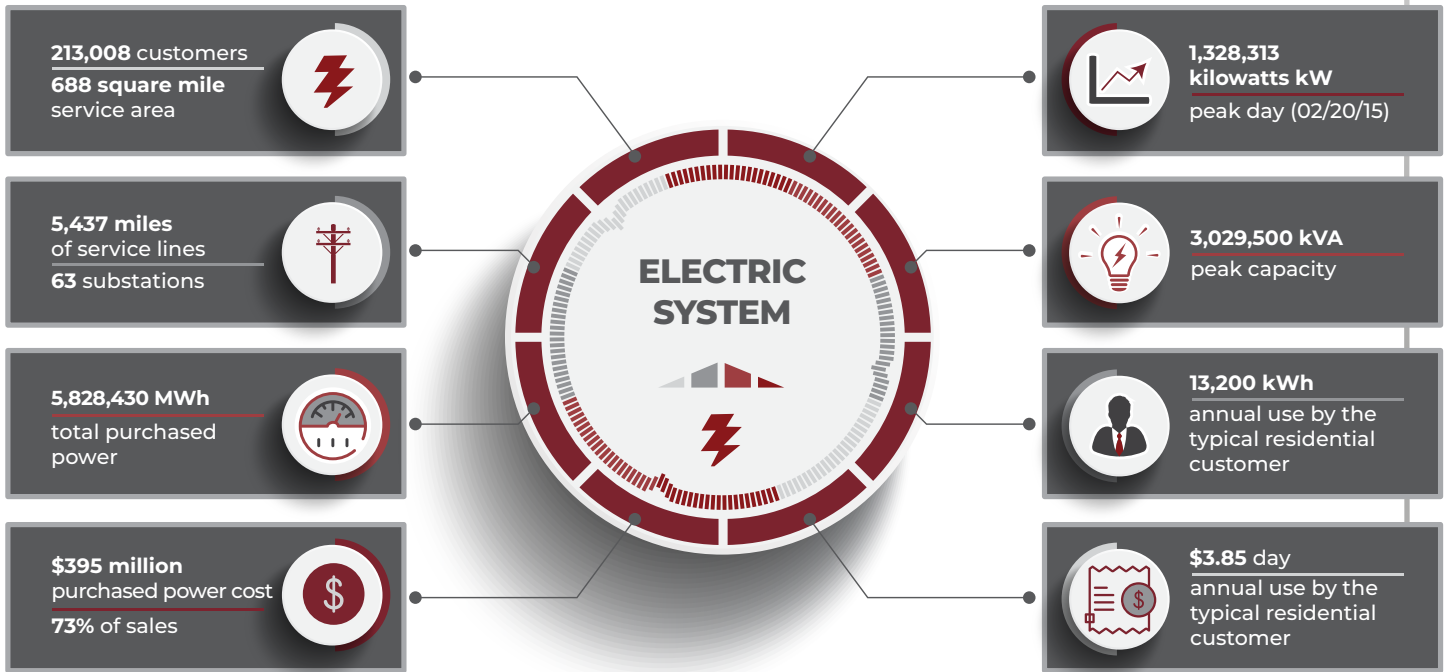


American Public Power Association

NATIONALLY RECOGNIZED WITH A PERFECT SCORE

FOR RELIABILITY, SAFETY, WORKFORCE
DEVELOPMENT, & SYSTEM IMPROVEMENT

Electric  



Financials

\$31.6 million positive change in net position

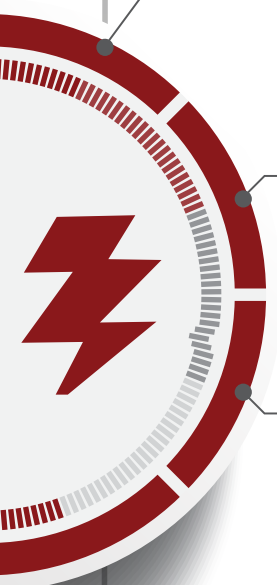
\$275.4 million outstanding debt

38.3% debt ratio

Aa2 Moody's Bond Rating

AA S&P's Bond Rating





1.24
outages

KUB exceeded its FY 21 reliability goals, with the average customer experiencing 1.24 occurrences of power interruption – an improvement of 0.77 outage occurrences from the previous year.

2.5M
minutes

2.5 million customer minutes of electric service interruption were saved because of fault location, isolation, and service restoration (FLISR) technology, which automatically isolates outages. In FY 21, KUB installed 35 FLISR devices and gained approval to begin a 7-year installation of devices across the service territory.

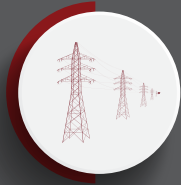
700
miles

Since over 50 percent of electric outages are caused by vegetation, KUB prunes trees and shrubbery along lines on a regular cycle. In FY 21, KUB invested \$10 million to trim along 700 miles of electric lines and remove over 2,000 hazardous trees.



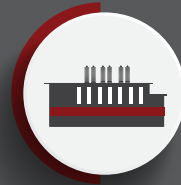
POLE REPLACEMENT

More than **1,400 poles** were replaced in FY 21, as part of KUB's ongoing Century II infrastructure maintenance and replacement program. More than **22,000 poles** have been replaced since 2012.



TRANSMISSION LINE REPLACEMENT

9 miles of transmission line were replaced in FY 21 as part of KUB's high voltage transmission system rebuild, which will improve reliability and upgrade communication infrastructure through fiber optic lines linking substations.



SUBSTATION MODERNIZATION

KUB's substation modernization efforts are **72 percent** complete. Modernization efforts include installation of longer-lasting technology and animal resistant equipment to improve reliability.



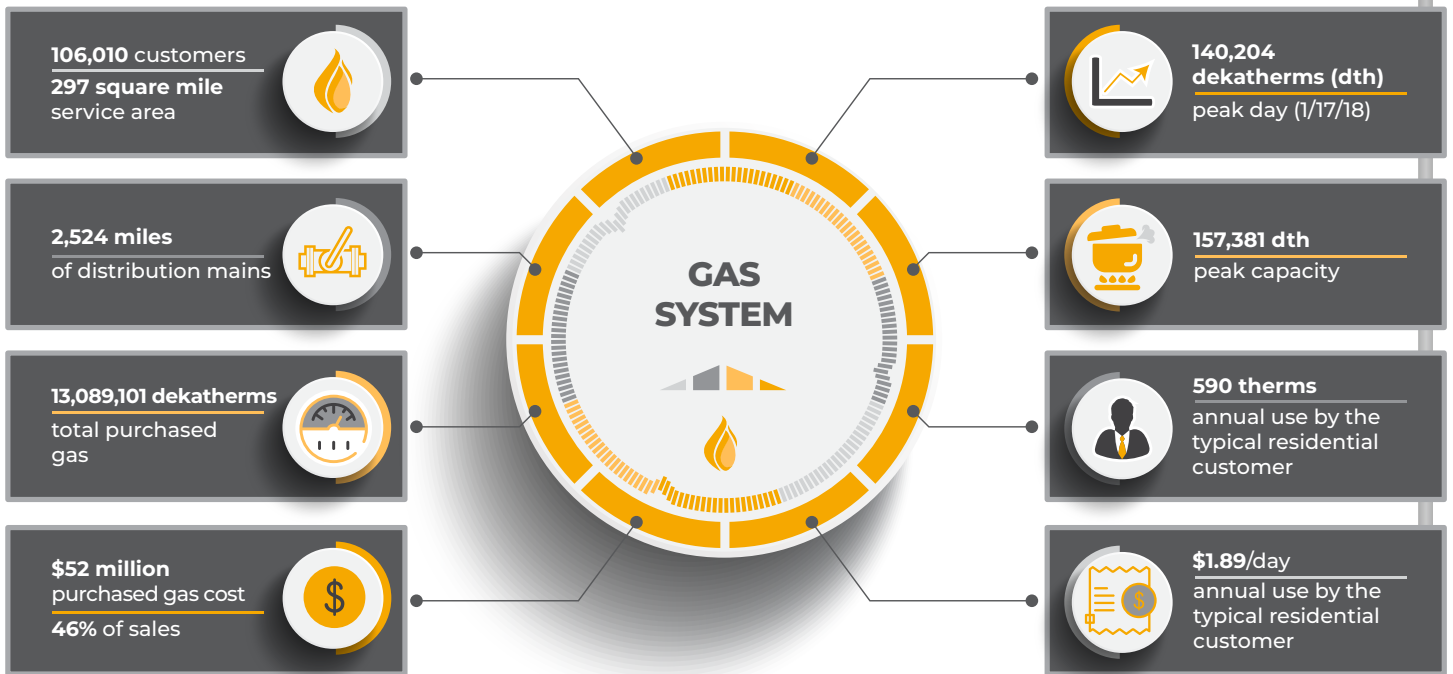
UNDERGROUND CABLE UPGRADES

More than **4 miles** of underground cable were replaced in FY 21 as part of Century II. In addition to the 4 miles, more than **4,600 feet** of underground cable were replaced and 2 underground vaults were upgraded serving downtown Knoxville.

**RANKED AMONG THE
TOP 14 GAS UTILITIES
IN THE NATION**



American Public Gas Association



Financials

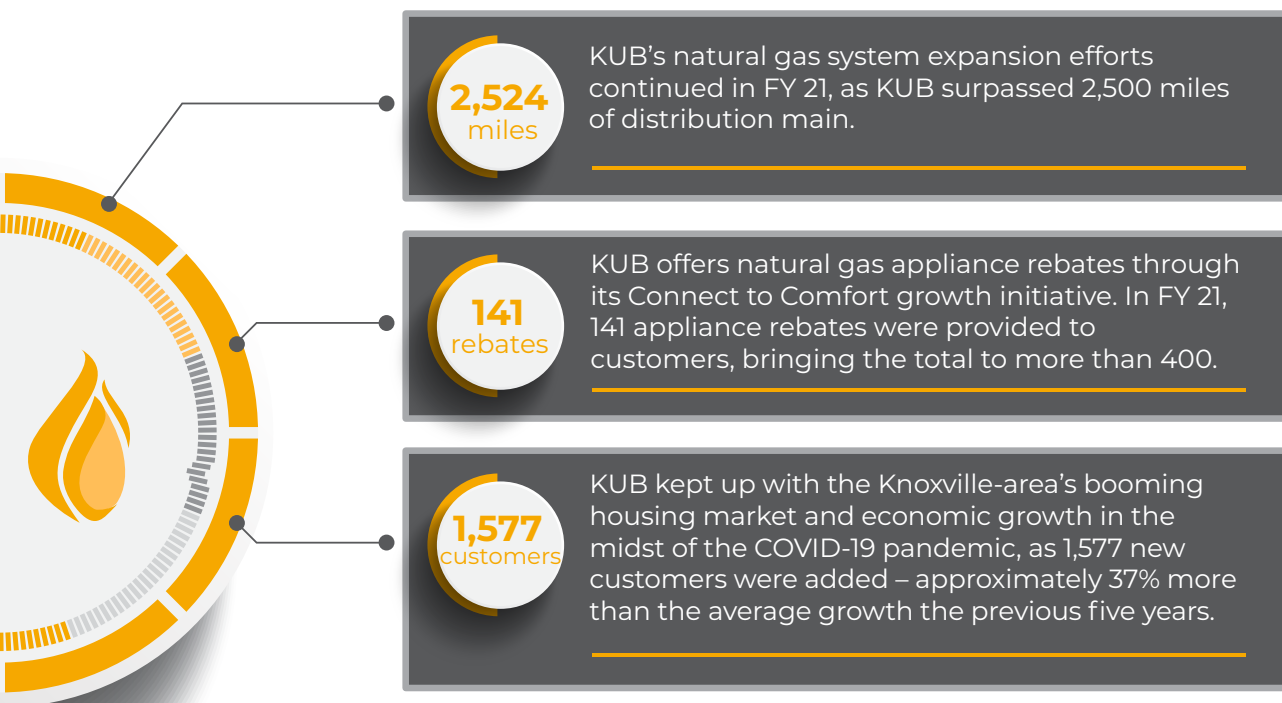
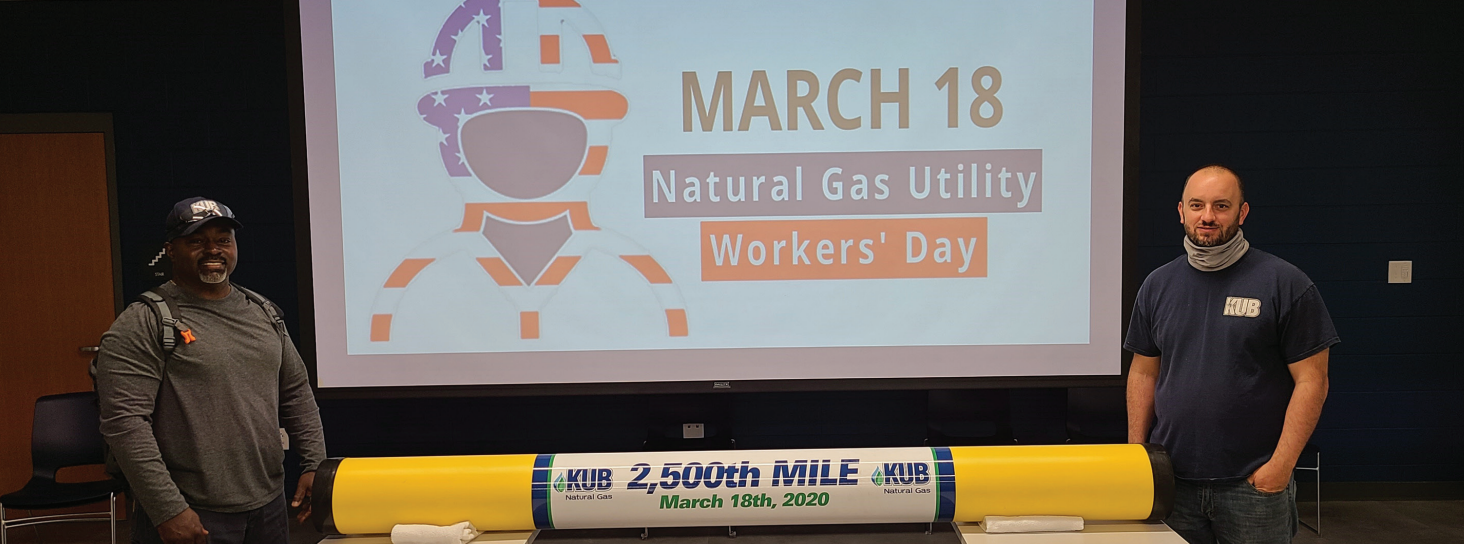
\$17.2 million positive change in net position

\$91.6 million outstanding debt

25.5% debt ratio

Aa2 Moody's Bond Rating

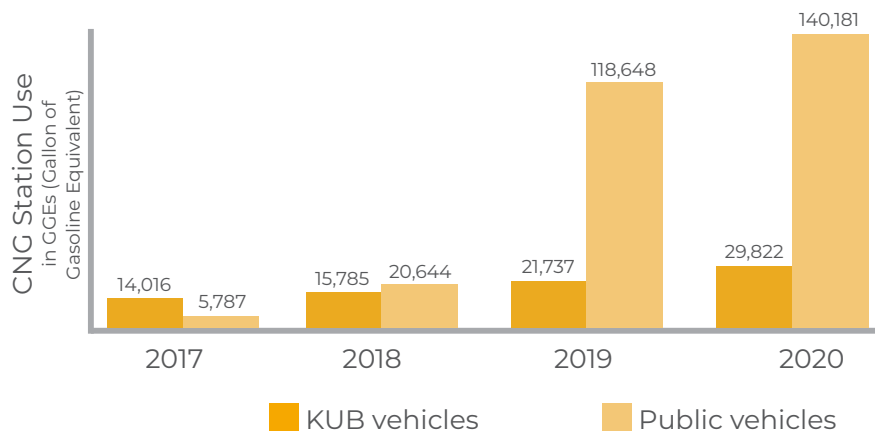
AA S&P's Bond Rating





CNG Fueling Station

KUB opened **Knoxville's first public compressed natural gas (CNG)** fueling station in 2017 to support the use of cleaner-burning fuels among its alternative fuel fleet, as well as local and regional fleets. CNG can reduce CO2 emissions by up to 30% compared to gasoline.





GAS MAIN REPLACEMENT

8.85 miles of steel main were replaced with polyethylene pipe, which has a lower installation cost and considerably less maintenance, as part of KUB's Century II infrastructure maintenance and replacement program.



SYSTEM RESILIENCY

KUB installed **2.6 miles** of distribution main to provide resiliency to strategic locations within the gas system, providing an added level of reliability.

KUB also developed a 20-year Natural Gas Master Plan to operate and maintain a long-lasting, reliable, and safe gas system.



GAS VALVE MAINTENANCE

KUB's in-house gas valve maintenance crew inspects KUB's 21,000 valves on a five-year cycle with critical valves inspected annually.

With more than **4,300 valves** inspected in 2021, KUB is on track to exceed its 21,000-valve goal in its first five-year cycle.

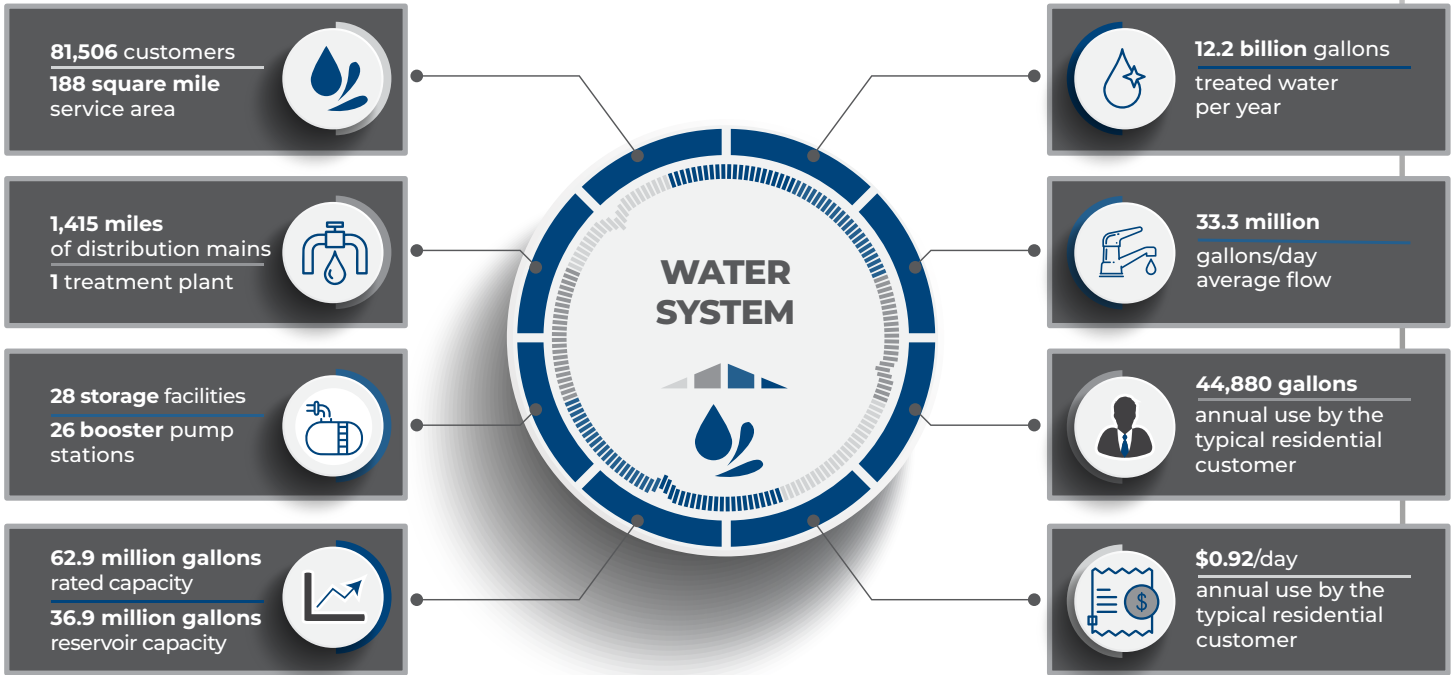


ASSOCIATION OF
METROPOLITAN
WATER AGENCIES

NATIONALLY RECOGNIZED WITH
PLATINUM AWARD

FOR WATER QUALITY, SUSTAINABLE
OPERATIONS, & SYSTEM IMPROVEMENT

Water



Financials

\$8.9 million positive change in net position

\$198.6 million outstanding debt

48.5% debt ratio

Aa1 Moody's Bond Rating

AAA S&P's Bond Rating





PIPE REPLACEMENT

More than **8 miles** of galvanized pipe and more than **6 miles** of cast iron/cement pipe were replaced throughout FY 21 as part of KUB's Century II infrastructure maintenance and replacement program.



SYSTEM RESILIENCY

KUB maintains hydraulic modeling and Water Master Plans to determine distribution system and plant upgrades to ensure resiliency.

KUB also recently completed a source water study, which allows for incident preparedness and increased source water protection.



HYDRANT & VALVE MAINTENANCE

KUB crews operate and maintain **8,500 hydrants** on a 3-year maintenance cycle.

Crews also inspect and maintain KUB's **20,000 water valves** on a 5-year cycle with critical valves inspected annually.



VALVE REPLACEMENT

KUB utilizes technology that allows crews to replace water valves without interrupting customers' water service. In FY 21, this included the valve replacement at KUB's Beaumont Avenue Pump Station, which avoided a major pump station outage and maintained water system resilience.



H2O To Go

KUB offers its high-quality water for community organizations and groups through its H2O To Go mobile water station. The station promotes the use of reusable water bottles throughout the community.

Although H2O To Go was not in service for much of FY 21 in response to the COVID-19 pandemic, it has **provided water at 14 community events since it opened in 2019.**



**NATIONALLY RECOGNIZED AS A
MODEL UTILITY**

**FOR WATERSHED STEWARDSHIP &
RESOURCE RECOVERY IN
WASTEWATER OPERATIONS**



Financials

\$17.8 million positive change in net position

\$476.7 million outstanding debt

56.7% debt ratio

Aa2 Moody's Bond Rating

AA+ S&P's Bond Rating



PIPE REHAB & REPLACEMENT

As part of KUB's ongoing Century II infrastructure maintenance and replacement program, **15.6 miles** of pipe were rehabilitated or replaced in the wastewater system during FY 21.



PLANT INVESTMENT

As part of the Century II program, KUB invested approximately **\$8.2 million** in wastewater plant maintenance and improvements during FY 21. Approximately **\$16.1 million** was also invested in upgrades to the Kuwahee Wastewater Treatment Plant as part of the final project under KUB's Consent Decree, which is valued at **\$655 million** in total.



FINANCIAL STEWARDSHIP

During FY 21, KUB lowered Wastewater System debt by over **\$47 million** by refinancing outstanding bonds. These savings resulted in the elimination of a planned wastewater rate increase and furthered KUB's progress in meeting its long-range debt reduction goals.



Biosolids

For over 30 years, KUB has produced biosolids, a nutrient-rich, high-quality product of the wastewater treatment process. KUB biosolids are a Tennessee Department of Agriculture-certified fertilizer applied to local farms for free.



10
years

KUB's Biosolids Beneficial Reuse Program has been Platinum certified through the National Biosolids Partnership since 2011.

1
of
20

KUB's Biosolids program is the only NBP-certified program in Tennessee. It is one of 20 certified programs in the U.S.

16
farmers

In 2020, 16 farms received 24,476 wet tons of biosolids, keeping the material out of landfills and reducing the farmers' fertilizer costs.



Community Relations



RECOGNIZED AS

DIVERSITY CHAMPION

BY DR. MARTIN LUTHER KING, JR.
COMMEMORATIVE COMMISSION

NAMED

COMMUNITY CHAMPION

BY TVA ENERGYRIGHT

Pandemic Relief



\$240K

KUB secured \$160,000 in grants for local nonprofits providing pandemic relief, and matched those grants with an \$80,000 investment.

20K
customers

After a 7-month service disconnection moratorium, KUB automatically enrolled nearly 20,000 customers in extended payment plans, which deferred more than \$12M in payments.

\$2.2
million

KUB waived late fees, payment transaction fees, and door notice fees, which totaled more than \$2.2M in customer savings. Door notice and debit/credit card transactional fees will not resume after the pandemic.

\$6.2
million

In FY 21, KUB established the COVID Utility Relief Effort (CURE) to provide bill payment assistance to customers impacted by the pandemic. CURE provided approximately \$6.2 million in assistance to more than 9,000 customers, in partnership with TVA and the Knoxville-Knox County Community Action Committee.

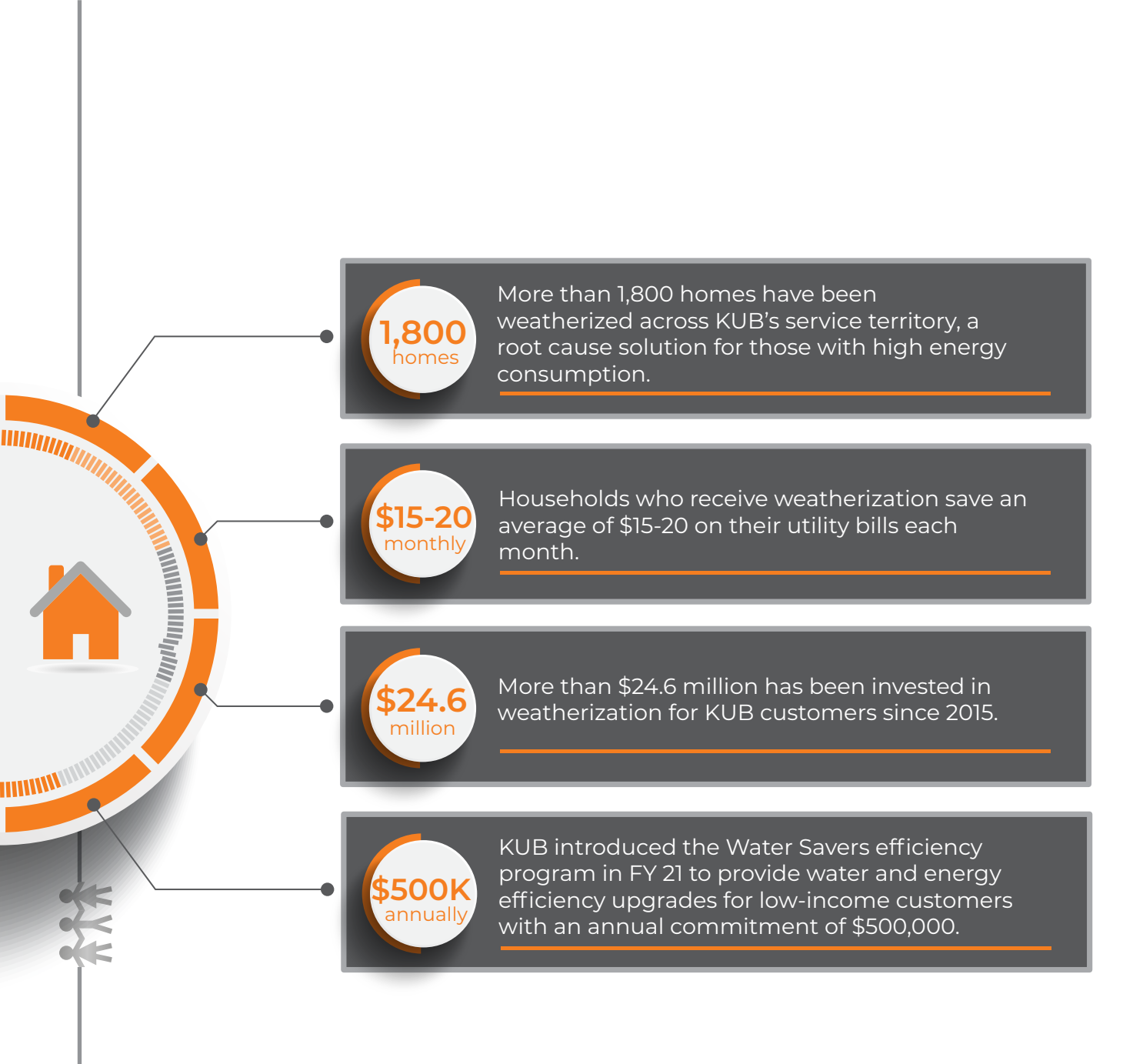


A home weatherization recipient received a home efficiency evaluation from TVA EnergyRight.

Low-Income Assistance

More than 1,800 low-income families have received home weatherization improvements since KUB launched its Round It Up program in 2015, which allows customers to round their bill to the next dollar to support weatherization. In addition to customer contributions, KUB has committed \$1M annually to weatherization and introduced its Water Savers efficiency program in FY 21.

Home energy upgrades are also funded through the Knoxville Extreme Energy Makeover (2015-2017), TVA Home Uplift, and grants including the new TDEC weatherization funds. In total, more than \$24.6 million has been invested in weatherization for KUB customers since 2015. Apply for weatherization assistance or enroll in Round It Up [here](#).



1,800
homes

More than 1,800 homes have been weatherized across KUB's service territory, a root cause solution for those with high energy consumption.

\$15-20
monthly

Households who receive weatherization save an average of \$15-20 on their utility bills each month.

\$24.6
million

More than \$24.6 million has been invested in weatherization for KUB customers since 2015.

\$500K
annually

KUB introduced the Water Savers efficiency program in FY 21 to provide water and energy efficiency upgrades for low-income customers with an annual commitment of \$500,000.



18K
hours

VOLUNTEER TIME

KUB offers full-time employees 8 hours of paid volunteer time each year. Since 2014, **more than 18,000 hours** have been used serving the community.

\$209K

EMPLOYEE CAMPAIGNS

In 2020, the KUB employee United Way campaign raised **nearly \$209,000 for the United Way of Greater Knoxville.**

45

COMMUNITY WORKSHOPS

KUB participated in **45 educational appearances** in 2020, including safety demonstrations and new virtual children's Energy & Water Savings Workshops. Request a workshop [here](#).



**SMART
ENERGY
PROVIDER**

American Public Power Association

**NATIONALLY RECOGNIZED FOR
ENVIRONMENTAL
STEWARDSHIP
& COMMITMENT TO A
MORE SUSTAINABLE FUTURE**



Leading the Way in Solar

KUB increased its solar commitment through TVA's Green Invest Program in FY 22 to 502 megawatts. Solar-generated electricity will supply **20% of KUB's load** by the end of 2024, positioning Knoxville as a leader in renewable energy regionally and nationally. That's enough solar energy to power **83,000 homes** each year.

KUB has also committed \$1.5M to constructing **Knoxville's first community solar project**, a partnership with TVA and the City of Knoxville. The 1-megawatt array will be housed on 3 acres of land at the city's Public Works Facility. The array is scheduled to go online in 2022. These sustainable steps earned KUB one of two 2020 Solar Champion Awards from the Tennessee Solar Energy Industries Association.



Customer Programs



KUB offers customers the opportunity to purchase renewable energy in quantities matching their monthly consumption through **Green Switch Match**. The average customer can participate for \$11 per month, and **more than 140 customers** enrolled during the program's first 8 months. Sign up [here](#).



KUB is the first and only one of TVA's local power companies to offer electric vehicle rebates. **174 rebates of up to \$400** have been awarded to customers who install new level 2 chargers in their homes. Apply [here](#).



Through the Smart Thermostat Pilot Program, KUB and TVA offer customers a free, installed ecobee smart thermostat in return for participation in a demand response program to reduce electric system peaks. **More than 400 smart thermostats** have been installed across KUB's service territory. Sign up [here](#).



Employee Efforts

KUB's Environmental Employee Engagement Team includes department representatives from across the organization. The team identifies and promotes sustainability opportunities for KUB employees. For decades, employees have organized local stream clean-ups through Ijams Nature Center's River Rescue and Knox County's Adopt-A-Stream. Employees also maintain and utilize a supply of recycled office materials for reuse, as well as KUB-logged apparel.



Operational Sustainability



KUB is implementing several efficiency improvements across its facilities.

Multi-year LED lighting replacement: 100% complete at water/wastewater remote sites & electric substations. 50% complete at water/wastewater plants.

Smart thermostats & building automation at the Miller's Building

HVAC retrofits at various buildings



KUB's Hoskins Operations Center features two solar arrays:

A 50-kilowatt array at the Mintha Roach Corporate Services building

A 57-kilowatt array at the LEED-certified Engineering Building



KUB works to reduce CO2 emissions in its fleet, which includes vehicles that run on electricity, CNG, and ethanol.

Gold Partner, Board Member, & Green Fleet in the TN Clean Fuels Coalition

No. 77 on the 2021 100 Best Fleets in America



KUB maintains a Materials Reuse Program, which allows customers to request items that KUB no longer needs. This includes wood utility poles, pallets, plastic buckets, empty wire reels, and shipping materials.

The program allows for beneficial reuse of the materials and keeps them out of a landfill.

Request materials [here](#).



Knoxville Utilities Board



@KnoxKUB



@knoxvilleutilitiesboard



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www.kub.org